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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/725,128

11/29/2000

Duk-Yong Kim

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05/10/2004

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EXAMINER

DAVIS, TEMICA M

ART UNIT

PAPER NUMBER

2681

DATE MAILED: 05/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/725,128

Applicant(s)

KIM ET AL.

Examiner

Temica M. Davis

Art Unit

2681

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-31 is/are allowed.
- 6) ☒ Claim(s) 1-3,32-34,42-46 is/are rejected.
- 7) ☒ Claim(s) 4-9 and 35-41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-3 and 32-46 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 32, 42 and 44 are rejected under 35 U.S.C. 102(e) as being anticipated by Karlsson et al (Karlsson), U.S. Patent No. 6,018,663.

Regarding claim 32, the combination of Karlsson and McFarlane discloses a method for allocating FAs to N sectors of a service area in a base transceiver station (BTS) for use in a wireless communication system, N being a positive integer, comprising the steps of: a) grouping said N sectors into a plurality of small groups based on subscriber's information; and b) determining the number of dynamic FAs and the number of fixed FAs for each small group based on the subscriber's information (col. 4, lines 35-65, col. 5, line 48-col. 6, line 29, col. 1, lines 61-66).

Regarding claim 42, Karlsson discloses the method of claim 32, and further reads on wherein the subscriber's information is a call request information corresponding to each sector as evidenced by the fact the system can handle an increase in telephone traffic (col. 1, lines 61-64, col. 6, lines 41-43).

Regarding claim 44, Karlsson discloses the method of claim 32, wherein the subscriber's information is the number of subscribers located in each sector of a target base station (col. 1, lines 61-64, col. 6, lines 41-43).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karlsson et al (Karlsson), U.S. Patent No. 6,018,663 in view of McFarlane et al (McFarlane), U.S. Patent No. 5,200,955.

Regarding claim 1, Karlsson discloses a system for allocating frequency allocations (FAs) to each of N sectors in a base transceiver station (BTS) for use in a mobile communication system, N being a positive integer, comprising: means for determining d# and f#, each representing the number of dynamic FAs and the number of fixed FAs, respectively (as evidenced by the fact that the cellular network employs a

conventional frequency allocation strategy which can be fixed or dynamic and wherein each cell site is pre-allocated a certain number of those frequency channels (col. 4, lines 35-65); an array of sector amplifiers (col. 5, lines 51-55).

Karlsson, however, fails to disclose a switch that switchably connects the dynamic FAs to the sector amplifiers.

McFarlane discloses this limitation (col. 3, lines 21-33).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Karlsson with the teachings of McFarlane for the purpose of ensuring that the channels which are in use are able to provide a stronger signal.

Regarding claim 2, the combination of Karlsson and McFarlane discloses the system of claim 1, further comprising; an array of combiners for combining the dynamic FAs and the fixed FAs and outputting into d# output signals (Karlsson, col. 5, line 48-col. 6, line 29).

Regarding claim 3, the combination of Karlsson and McFarlane discloses the system of claim 2, wherein each of the sector amplifiers amplifies a corresponding output signal (Karlsson, col. 5, line 48-col. 6, line 29, McFarlane, col. 3, lines 24-33).

Regarding claims 43 and 45, the combination of Karlsson and McFarlane discloses the method of claim 42 as described above.

The combination, however, fails to disclose wherein the call request information is retrieved from a mobile switching center.

The examiner contends, however, that such a feature is well known in the art. Therefore, at the time of invention, it would have been obvious to a person of ordinary

skill in the art to modify the combination of Karlsson and McFarlane to include an MSC to provide such subscriber information since such techniques are well known in the art.

Regarding claim 46, the combination of Karlsson and McFarlane discloses the method of claim 32 as described above.

The combination, however, fails to disclose wherein N equals 6 so as to apply to a BTS for use in IMT 2000 communication system.

The examiner contends however, that at the time of invention, such a feature would have been obvious to a person of ordinary skill in the art since it has been held that where the general conditions of a claim are disclosed in prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Allowable Subject Matter

6. Claims 4-9 and 35-41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Regarding claim 4, prior art fails to suggest or render obvious a system wherein each of the sector amplifiers includes: a switchable divider for switchably dividing the corresponding signal; a number of multi-carrier power amplifiers (MCPAs) for amplifying the divided signal; and a switchable combiner for switchably combining the amplified signal.

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Regarding claims 5-9, they are indicated allowable based on their dependence from allowable claim 4.

Regarding claim 35, prior art fails to suggest or render obvious a method, wherein said amplifying step d) includes the steps of: d1) combining the dynamic and the fixed FAs by using an array of fixed combiners; d2) switchably dividing the combined FAs by using an array of switchable dividers; d3) amplifying the combined signals by using a multiple number of multi-carrier power amplifiers (MCPAs); and d4) combining the amplified FAs into $s\#$ output signals to be sent to sectors in a corresponding small group, respectively, by using an array of switchable combiners, $s\#$ representing the number of total FAs per small group. Note: The rejection to claims 33-41 must be overcome before this claim can be allowed.

Regarding claims 36-41, they are indicated allowable based on their dependence from allowable claim 35.

6. Claims 10-31 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter: Regarding claim 10, prior art fails to suggest or render obvious a base station (BS) for allocating FAs to each of N sectors incorporated therein, wherein N is a positive integer, comprising: a controller for grouping N sectors into M small groups and determining d and f for a small group, M being positive integer, d and f representing the number of dynamic FAs and the number of fixed FAs, respectively; d number of

combiners for combining the fixed FAs and the dynamic FAs for said each small group and outputting d number of signals; d number of switchable power divider/combiners; and d number of first switches for selectively switching the output signals to the switchable power divider/combiners, whereby the switchable power divider/combiners amplify signals inputted thereto at the same power level.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Temica M. Davis whose telephone number is (703) 306-5837. The examiner can normally be reached Monday-Friday (alternate Fridays) from 9:00am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Erika Gary can be reached on (703) 308-0123. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

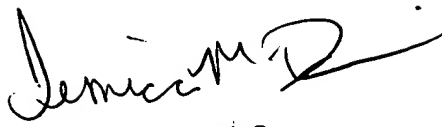
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Temica M. Davis
Examiner
Art Unit 2681

May 3, 2004



TEMICA M. DAVIS
PATENT EXAMINER